



Australian Bureau of Statistics

1301.0 - Year Book Australia, 2000

ARCHIVED ISSUE Released at 11:30 AM (CANBERRA TIME) 25/01/2000

REFORMS IN THE AUSTRALIAN ELECTRICITY AND GAS INDUSTRIES

This article reproduces material from the Productivity Commission draft report 'Impact of Competition Policy Reforms on Rural and Regional Australia', Canberra, May 1999.

ELECTRICITY INDUSTRY

Background

In Australia, electricity accounts for about 18% of final energy consumption, and some 66% of the commercial and 42% of the residential segments of the energy market. The manufacturing sector is the largest user, particularly for non-ferrous metal manufacture and pulp and paper production, both of which are located mainly in regional areas.

Until the late 1980s, the electricity supply industry comprised publicly owned, vertically integrated monopoly suppliers which operated in separate, extensively regulated State markets. This structure resulted in significant overmanning and overinvestment, inflated electricity costs and prices, and tariffs which did not reflect the cost of supplying different classes of users.

In July 1991, the relevant State Governments agreed to establish a National Grid Management Council (NGMC) to encourage and coordinate the most efficient, economic and environmentally sound development of the electricity industry in eastern and southern Australia. Their aim was to deliver cheaper electricity and a more rational use of the nation's resources, and to better position Australia in the international market for electricity supply.

The Council of Australian Governments (CoAG) announced, in June 1993, a firm commitment to have the necessary structural changes in place to allow the implementation of a competitive electricity market from 1 July 1995. These reforms involved industry restructuring, in particular the separation of generation, transmission and distribution, and the formation of a National Electricity Market (NEM) in the southern and eastern States. In April 1995 these reforms were reaffirmed and extended under the National Competition Policy (NCP).

Progress of the reforms

Since the 1991 CoAG agreement there has been unprecedented structural change in this sector, including:

- in New South Wales, the creation of three competing generation entities, an independent transmission business and the consolidation of distributors into six new distribution utilities;
- in Victoria, the separation and sale of all major power stations, all five distribution businesses and the transmission utility;

- in Queensland, the splitting of the major generator into three independent government businesses, the formation of a separate corporation to operate the State's transmission infrastructure, the retention of seven distribution corporations and the creation of three new retail businesses. However, the Queensland Government recently announced its decision to reamalgamate the distribution boards under a single Commission;
- in South Australia, the creation of separate entities responsible for generation, transmission and distribution functions;
- in Western Australia, the separation of electricity supply from water supply and its establishment as a corporatised business, and the sale of one of the State's power stations;
- in Tasmania, the separation of the State's vertically integrated electricity supplier into three entities responsible for generation and system control, transmission and retail/distribution;
- in the Australian Capital Territory, the structural separation ('ring fencing') of the Territory's electricity distribution and retail activities within the Government-owned water and electricity corporation; and
- in the Northern Territory, "a reduction in commercial electricity tariffs and a broadening of tariff options; improvements in operational efficiency; the removal of regulatory and policy functions from the Power and Water Authority; the development of Territory-based arrangements to progressively open the electricity generation and retail markets to competition; greater private sector involvement in service provision; and consideration of an economic regulatory regime for the electricity, water and sewerage industries". (NT Treasury, Budget Papers 1999-2000, Budget Paper No. 3, Chapter 9.)

Reforms to corporatise or commercialise all government utilities have placed publicly owned electricity suppliers on a more competitively neutral footing with their private sector counterparts. This has also resulted in pricing reforms to better reflect the underlying costs. Significant savings have resulted for business users as electricity providers have sought to recover a higher proportion of system costs from residential users. However, all jurisdictions have established arrangements to ensure that the pace of price restructuring is manageable.

The NEM became fully operational in December 1998, and encompasses 60 entities in New South Wales, Victoria, South Australia and the Australian Capital Territory. Queensland and Tasmania are expected to participate when the grid connections are completed. The NEM provides for:

- a common wholesale market serving interconnected jurisdictions;
- a single controller despatching generators in the interconnected jurisdictions;
- customer entitlements to purchase electricity either from the spot market or under contract with a supplier of their choice; and
- a market settlement function which handles spot and forward trading in the market and the contractual requirements of wholesale customers and generators.

While many submissions to the Productivity Commission Inquiry acknowledged the improvements in efficiency and cost savings, particularly for larger business users, several issues

of concern were also raised, including:

- the fact that, in some regions, the provision of current services and/or investments to upgrade facilities would not be viable under purely commercial pricing regimes and may require government intervention as a Community Service Obligation (CSO);
- the loss of direct employment opportunities in country areas, and increases in connection charges, subsuming any gains from lower usage tariffs;
- current network pricing regimes not recognising the proximity of users to generators, leading to inappropriate investment decisions and impeding regional development;
- the absence of arrangements which would permit small users to aggregate their requirements to achieve the size needed to be eligible to negotiate now, rather than later, in the contestable market segment of the NEM;
- excessive regulation eating into the efficiency gains from the reforms;
- implementation of the reforms being too rapid in some regional areas; and
- possible elimination of single phase electricity in some rural areas as a result of regulatory dictate.

Impacts of the reforms

The electricity reforms have already delivered significant benefits to Australia as a whole, including cost efficiencies which have allowed for reductions in usage charges. Many users in country Australia, particularly large business users, have benefited from large price reductions, although smaller users in some areas have experienced price increases. Reductions in overmanning of the supply sector have had a similarly large impact on both metropolitan and regional areas, while the rationalisation of maintenance depots has caused some regional centres to gain additional jobs at the expense of those in small towns.

Between 1991-92 and 1996-97, average real prices to all customers fell significantly in New South Wales, Queensland, Western Australia and South Australia. In Tasmania and the ACT, prices initially rose, then fell to levels below those in 1991-92. Business price reductions exceeded residential reductions by 24 percentage points in South Australia, 13 percentage points in New South Wales, 12 percentage points in Queensland and 6 percentage points in the ACT. However, in Western Australia and Tasmania, residential prices fell almost 8 percentage points more than business prices, while in the Northern Territory, price reductions for the two groups were similar. In Queensland, wholesale prices were reported to have fallen by about 23% since its internal competitive electricity market commenced.

Declining operating costs in public utilities underlie most of these price reductions. The NCP requirement for independent price regulation has helped to ensure that cost reductions have been passed on to users. Price regulation has also facilitated a realignment of prices across user groups, leading to larger price falls for commercial users in most jurisdictions.

The NEM has intensified price competition, with progressively more business users being able to choose their electricity supplier. Recent studies (Delloitte Touche Tohmatsu 1998; ACM 1998) indicated that electricity bills, for New South Wales and Victorian businesses which have been able to select their own supplier, have fallen by 25-30% on average. However, in some regional areas, tariffs have increased and in others the savings in usage charges have been offset by higher connection charges, in particular where a full cost recovery policy on asset works for new connections has been adopted. In some cases, this could result in prohibitive upfront costs for

new industries, and so could have a significant impact on economic development.

Access to the NEM appears to have been a major contributor to the price benefits already received by mining companies, larger local governments and agriculture-based firms located in regional Australia.

Service quality has become an important source of competitive advantage for electricity suppliers. Two measures of service quality commonly used are the 'average loss of supply per customer' and the 'average outage duration'. Anecdotal evidence, in regard to these measures, suggests that in some regional areas, price benefits from the electricity reforms have been at the expense of lower service quality.

As a result of State Governments addressing the overstaffing of their electricity utilities, employment in the electricity supply industry fell from over 80,000 in 1985 to about 37,000 in 1997. Increased competition, providing incentives for outsourcing of non-core activities, the centralisation of services and the implementation of new technologies, has seen this trend continue. Proportionally, the loss of labour in regional areas is little different to that in urban areas, while in absolute terms, employment losses in urban areas have been higher than in regional areas. Moreover, while the reforms have resulted in the closure of service outlets in some small communities, employment in larger centres which have become 'regional headquarters' has increased. As electricity consumption has increased over this period, labour productivity has improved substantially and has created scope for reductions in costs and prices in regional and urban areas alike.

Summary

The primary benefit of the electricity reforms, for Australia as a whole, has been the significant reductions in average usage charges, most of which to date have accrued to the business sector rather than to domestic users. Over time, small businesses and the residential sector are expected to benefit both directly, as the contestable market area expands, and indirectly, as cost reductions are passed on to consumers.

GAS INDUSTRY

Background

Natural gas accounts for 18% of Australia's primary energy consumption and is expected to account for around 28% by 2010. It is an important business input and alternative energy source to oil and coal. Major industrial users include the metals, chemicals, glass, brick, cement and electricity generation industries. In addition it is used by almost three million households, primarily in Victoria and New South Wales.

Until recently, the industry was largely State-based, State-regulated and primarily composed of vertically integrated State-owned utilities. In addition, legislation in some States restricted the flow of natural gas both within and between States. These restrictions were generally intended to avoid the risk of future gas shortages, or to ensure that gas was available to underpin industrial development within a State.

Competition in the gas industry was limited because of the dominance of a few producers, the existence of monopoly suppliers, the absence of interconnections between systems and a lack of third party access to gas pipelines. This resulted in costs and prices being well above efficient levels and a lack of investment incentives.

Initiatives such as the attempted privatisation of the Moomba-Sydney pipeline and the removal of the State Energy Commission of Western Australia's monopoly over gas supply, marked the beginnings of the reform process in the late 1980s.

In 1991, a Commonwealth Government strategy paper (DPIE 1991) focused on the development of free and fair trade and an integrated national pipeline grid, as well as the introduction of access to pipelines on commercially non-discriminatory terms.

Subsequent CoAG agreements established the following reforms, which were then included in the 1995 National Competition Policy (NCP):

- removal of all legislative and regulatory constraints to free and fair trade in gas;
- introduction of a uniform framework for access to gas transmission pipelines;
- corporatisation of the remaining government owned utilities;
- structural separation ('ring fencing') of publicly and privately owned, vertically integrated transmission and distribution activities; and
- reform of gas franchise arrangements.

Progress of the reforms

Since 1995, gas reforms have progressed in three key areas:

- the development of a national access regime - the National Access Code prepared by the Gas Reform Task Force, has been passed in legislation in all jurisdictions, and all jurisdictions have submitted applications to the National Competition Council for certification of their access regimes;
- the removal of legislative and regulatory barriers to competition - while the original July 1996 deadline for their complete removal was not met, the States and Territories have made significant progress toward removing their legislative and regulatory barriers to free and fair trade. For example, the Western Australian Government is seeking expressions of interest for a second pipeline to be constructed along the western seaboard without any legislative or regulatory barriers, and the South Australian Government has identified a number of instances where the costs of restrictions on competition for the supply of Cooper Basin reserves exceed the benefits; and
- the structural reform of gas facilities and utilities - for instance the Moomba-Adelaide pipeline, the State Gas Pipeline in Queensland and the Dampier-Bunbury transmission pipeline have been privatised, while all government owned gas utilities have been corporatised, sold or prepared for privatisation. Private sector gas utilities in jurisdictions other than South Australia and the Northern Territory have completed 'ring fencing' of their transmission and distribution activities.

There is a fairly widespread perception that gas reforms will generate benefits that significantly outweigh any associated costs, including in regional Australia. However, there are some concerns that the benefits could be reduced by:

- regulatory uncertainty and discretion in the application of the National Gas Access Code, which may add to compliance costs;

- setting the cap on the real rate of return at 7.75% for Victorian gas distributors, which may provide an insufficient incentive to improve service quality or increase investment in gas networks; and
- excessive delays in the pipeline approval procedures at the State level.

Impacts of the reforms

The reforms are providing significant benefits to many parts of Australia. In urban areas, there have been price reductions, particularly for businesses, and improvements in service quality. In regional areas, the primary benefit has been the stimulus provided to the extension of the gas network and the associated business opportunities.

Well over 100 main cities and towns across Australia have been connected to natural gas since 1990. Those areas which have recently gained or should gain access in future to natural gas include:

- the Murray Valley area between Chiltern in Victoria and Deniliquin in New South Wales;
- Mildura and surrounding areas;
- the Bellarine Peninsula to the south of Melbourne;
- Yandina, Nambour, Gympie and Noosa in Queensland; and
- Kalgoorlie/Boulder, Mandurah, Busselton and the northern goldfields (Leonora) in Western Australia.

Improved access to natural gas in country Australia has created opportunities for new activities such as electricity co-generation, and has enabled existing businesses and some households to substitute gas for other energy sources such as electricity and diesel fuels. For example, process heating and, in remote areas, electricity generation are inherently less economic than gas.

In its submission to the Productivity Commission, The Australian Gas Association (AGA) stated that "natural gas allows enterprises in regional Australia to compete more effectively with businesses located in major urban areas, encouraging the decentralisation of production and distribution", and that the new pipeline proposals, totalling 11,000 kilometres, which are currently under consideration will "have strong positive regional effects. The pipeline projects identified by the AGA entail investment of around \$6 billion over the next several years".

In aggregate terms, real usage charges have fallen, particularly for business users, who have benefited from the rebalancing of charges between businesses and households, and improvements in service delivery. Households have benefited where cost savings from efficiency gains have outweighed the price-raising effects of the rebalancing of charges. For example, NUS International (NUS 1999) reported that gas prices for industrial and residential users fell by an average of 22% Australia-wide between 1994 and 1998. In Western Australia, usage charges for residential users fell by 9% in real terms between 1991-92 and 1996-97, while charges for business users (excluding contracts negotiated by major industrial users) fell by more than 10% over the same period.

In country regions previously connected to the gas network, price reductions have also been evident for industrial and commercial users. For example, in the Pilbara region, usage charges for most large industrial users have fallen, since 1995, by more than 50%. In Queensland, as a result of the sale of the State Gas Pipeline, which runs from Wallumbilla to Gladstone,

Queensland Alumina Limited (QAL) reported that "its gas transportation tariff immediately reduced by around 25% and the tariff pricing principles provide for further incentive pricing as pipeline throughput increases". (Industry Commission study - IC 1998.) It is expected that State Government approval of access arrangements and licenses to build pipelines linking the south west Queensland gas fields with existing markets in south east and central Queensland will further reduce prices.

The combined impact of better access and lower prices, on the competitiveness of user industries and the investment climate, can be seen, for example, in the Pilbara and Goldfields regions in Western Australia. In these regions, price falls of more than 50% have encouraged large investments, particularly in the construction of the Pilbara-Goldfields gas pipeline and associated infrastructure, and have enabled reticulation of gas in Kalgoorlie. Access to cheaper energy for mineral production has also cut production costs and provided stimulus to new investment, from the iron ore regions in the north west to the nickel and gold belt to the north of Kalgoorlie. In the Riverina area of New South Wales, access to natural gas in 1993 has increased employment and activity in existing industries, and assisted the establishment of new industries, with many relocating to take advantage of the cheaper energy.

Aggregate reductions in gas prices in the 1990s have been underpinned by strong productivity gains, which have been brought about particularly by the open access arrangements for pipelines and the introduction of competition into some gas markets. The number of customers per employee has more than doubled between 1992 and 1997, and real 'controllable' costs have declined by more than 40%. It is expected that competition pressures, and hence the likelihood of lower prices and/or better services, will increase when all gas markets become fully contestable in July 2002.

The importance of service quality was highlighted by the recent failure of the Longford gas plant. There is some evidence of service quality improvements in Victoria, where, for example, the proportion of calls for assistance answered within 20 seconds increased from 64% to 84% between 1991-92 and 1996-97. Similarly, in Western Australia, the responsiveness rate of AlintaGas also rose over the same period, while the number of unplanned interruptions to gas supply has fallen since 1994-95.

Loss of employment in the gas industry has been the major adverse effect of the reforms. Between 1992 and 1997, six major gas distributors reduced their workforce by more than 40%. However, most of the losses are likely to have been in metropolitan areas, and these would have been offset by:

- increased employment by firms providing services to gas suppliers as a result of contracting out by suppliers;
- increased employment resulting from the expansion of the gas network to country areas; and
- higher employment in user industries, which have become more competitive as a result of the falls in gas prices.

Summary

While significant price reductions have been apparent in the gas sector, the major benefit for regional Australia has been the acceleration in the extension of the pipeline network into rural Australia and across State borders.

According to the AGA, in some parts of Australia the reforms will facilitate the evolution of specialist energy retailers, who will compete vigorously for market share to the continued benefit

of users. Improved access to gas services and lower prices could also give rise to environmental benefits, particularly in electricity generation, where gas could be substituted for fossil fuels in large scale generation plants, and from the increased use of gas-fired co-generation plants.

References

Australian Chamber of Manufactures (ACM) 1998, **Outcomes of the Contestable Market of New South Wales and Victoria**, June.

Delloite Touche Tohmatsu 1998, **Delliotte Electricity Survey**, Melbourne, May.

Department of Primary Industries and Energy (DPIE) 1991, **A National Strategy for the Natural Gas Industry: A Discussion Paper**, AGPS, Canberra.

Industry Commission (IC) 1998, **Micro Reforms - Impact on Firms: Aluminium Case Studies**, Research paper, AGPS, Canberra.

Northern Territory Budget Papers 1999-2000, Budget Paper No. 3.

NUS International 1998, 'Australian commercial water prices drop most in western world', **News Release**, 14 December.

NUS International 1999, 'Australia now among cheapest countries for gas', **News Release**, 11 January.

The Australian Gas Association (AGA) 1998, **Gas Distribution and Retailing, Responding to New Opportunities**, Research paper, no. 9, June.

Working Group 1994, **Report of the Working Group on Water Resource Policy to the Council of Australian Governments**, Canberra, February.

This page last updated 24 September 2007

© Commonwealth of Australia

All data and other material produced by the Australian Bureau of Statistics (ABS) constitutes Commonwealth copyright administered by the ABS. The ABS reserves the right to set out the terms and conditions for the use of such material. Unless otherwise noted, all material on this website – except the ABS logo, the Commonwealth Coat of Arms, and any material protected by a trade mark – is licensed under a Creative Commons Attribution 2.5 Australia licence